

54-000330US.ST25.LXX
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 SEQUENCE LISTING

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 Schultz, Peter G

<120> COMPOSITIONS OF ORTHOGONAL LYSYL-tRNA AND AMINOACYL-tRNA
 SYNTHETASE PAIRS AND USES THEREOF

<130> 54-000330PC

<140> PCT/US 04/022187

<141> 2004-07-07

<160> 37

<170> PatentIn version 3.2

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<213> Pyrococcus abyssi

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 35 40 45
 Gly His Ala Leu Arg Asp Lys Gly Tyr Glu Val Arg His Ile His Met
 50 55 60
 Trp Asp Asp Tyr Asp Arg Phe Arg Lys Val Pro Arg Asn Val Pro Gln
 65 70 75 80
 Glu Trp Lys Asp Tyr Leu Gly Met Pro Ile Ser Glu Val Pro Asp Pro
 85 90 95
 Trp Gly Cys His Glu Ser Tyr Ala Glu His Phe Met Arg Lys Phe Glu
 100 105 110
 Glu Glu Val Glu Lys Leu Gly Ile Glu Val Asp Phe Leu Tyr Ala Ser
 115 120 125
 Glu Leu Tyr Lys Arg Gly Glu Tyr Ser Glu Glu Ile Arg Leu Ala Phe
 130 135 140
 Glu Lys Arg Asp Lys Ile Met Glu Ile Leu Asn Lys Tyr Arg Glu Ile
 145 150 155 160
 Ala Lys Gln Pro Pro Leu Pro Glu Asn Trp Trp Pro Ala Met Val Tyr
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 Cys Pro Glu His Arg Arg Glu Ala Glu Ile Ile Glu Trp Asp Gly Gly
 180 185 190
 Trp Lys Val Lys Tyr Lys Cys Pro Glu Gly His Glu Gly Trp Val Asp
 195 200 205
 Ile Arg Ser Gly Asn Val Lys Leu Arg Trp Arg Val Asp Trp Pro Met
 210 215 220
 Arg Trp Ser His Phe Gly Val Asp Phe Glu Pro Ala Gly Lys Asp His
 225 230 235 240
 Leu Val Ala Gly Ser Ser Tyr Asp Thr Gly Lys Glu Ile Ile Lys Glu
 245 250 255
 Val Tyr Gly Lys Glu Ala Pro Leu Ser Leu Met Tyr Glu Phe Val Gly
 260 265 270

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Ile Lys Gly Gln Lys Gly Lys Met Ser Gly Ser Lys Gly Asn Val Ile
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Leu Leu Ser Asp Leu Tyr Glu Val Leu Glu Pro Gly Leu Val Arg Phe
290 295 300

Ile Tyr Ala Arg His Arg Pro Asn Lys Glu Ile Lys Ile Asp Leu Gly
305 310 315 320

Leu Gly Ile Leu Asn Leu Tyr Asp Glu Phe Asp Lys Val Glu Arg Ile
325 330 335

Tyr Phe Gly Val Glu Gly Gly Lys Gly Asp Asp Glu Glu Leu Arg Arg
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Thr Tyr Glu Leu Ser Val Met Leu Pro Thr Tyr
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cacatccaca tgtgggatga ttatgataga tttaggaagg ttccaaggaa cgttccccag 240
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Tyr Val His Val Gly Asn Phe Arg Glu Leu Phe Thr Ala Tyr Ile Val
35 40 45

Gly His Ala Leu Arg Asp Lys Gly Tyr Glu Val Arg His Ile His Met
50 55 60

Trp Asp Asp Tyr Asp Arg Phe Arg Lys Val Pro Arg Asn Val Pro Gln
65 70 75 80

Glu Trp Lys Asp Tyr Leu Gly Met Pro Ile Ser Glu Val Pro Asp Pro
85 90 95

Trp Gly Cys His Glu Ser Tyr Ala Glu His Phe Met Arg Lys Phe Glu
100 105 110

Glu Glu Val Glu Lys Leu Gly Ile Glu Val Asp Phe Leu Tyr Ala Ser
115 120 125

Glu Leu Tyr Lys Arg Gly Glu Tyr Ser Glu Glu Ile Arg Leu Ala Phe
130 135 140

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Glu Lys Arg Asp Lys Ile Met Glu Ile Leu Asn Lys Tyr Arg Glu Ile
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Ala Lys Gln Pro Pro Leu Pro Glu Asn Trp Trp Pro Ala Met Val Tyr
165 170 175

Cys Pro Glu His Arg Arg Glu Ala Glu Ile Ile Glu Trp Asp Gly Gly
180 185 190

Trp Lys Val Lys Tyr Lys Cys Pro Glu Gly His Glu Gly Trp Val Asp
195 200 205

Ile Arg Ser Gly Asn Val Lys Leu Arg Trp Arg Val Asp Trp Pro Met
210 215 220

Arg Trp Ser His Phe Gly Val Asp Phe Glu Pro Ala Gly Lys Asp His
225 230 235 240

Leu Val Ala Gly Ser Ser Tyr Asp Thr Gly Lys Glu Ile Ile Lys Glu
245 250 255

Val Tyr Gly Lys Glu Ala Pro Leu Ser Leu Met Tyr Glu Phe Val Gly
260 265 270

Ile Lys Gly Gln Lys Gly Lys Met Ser Gly Ser Lys Gly Asn Val Ile
275 280 285

Leu Leu Ser Asp Leu Tyr Glu Val Leu Glu Pro Gly Leu Val Arg Phe
290 295 300

Ile Tyr Ala Arg His Arg Pro Asn Lys Glu Ile Lys Ile Asp Leu Gly
305 310 315 320

Leu Gly Ile Leu Asn Leu Tyr Asp Glu Phe Asp Lys Val Glu Arg Ile
325 330 335

Tyr Phe Gly Val Glu Gly Gly Lys Gly Asp Asp Glu Glu Leu Arg Arg
340 345 350

Thr Tyr Glu Leu Ser Met Pro Lys Lys Pro Glu Arg Leu Val Ala Gln
355 360 365

Ala Pro Phe Arg Phe Leu Ala Val Leu Val Gln Leu Pro His Leu Thr
370 375 380

Glu Glu Asp Ile Ile Asn Val Leu Ile Lys Gln Gly His Ile Pro Arg
385 390 395 400

Asp Leu Ser Lys Glu Asp Val Glu Arg Val Lys Leu Arg Ile Asn Leu
405 410 415

Ala Arg Asn Trp Val Lys Lys Tyr Ala Pro Glu Asp Val Lys Phe Ser
 420 425 430

Ile Leu Glu Lys Pro Pro Glu Val Glu Val Ser Gly Asp Val Arg Glu
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Ala Met Asn Glu Val Ala Glu Trp Leu Glu Asn His Glu Glu Phe Ser
 450 455 460

Val Glu Glu Phe Asn Asn Ile Leu Phe Glu Val Ala Lys Arg Arg Gly
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Ile Ser Ser Arg Glu Trp Phe Ser Thr Leu Tyr Arg Leu Phe Ile Gly
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